

CLAIM AMENDMENTS

1. (Presently Amended) In a multiple access chirp radio communication system, a method of discriminating between plural types of mobile transmitters transmitting chirp signals of different slopes within a same frequency range comprising the steps of:

(a) encoding data on a series of chirps signals by starting a second chirp and subsequent chirps of the series of chirp signals at frequencies different from a nominal frequency by a specific amount,

(b) transmitting the series of chirp signals from one of the plural type of mobile transmitters, wherein the series of chirp signals have a slope associated with the respective one of the plural type of transmitters;

(a-c) receiving the a-chirp signal;

(b-d) detecting the slope of the received chirp signal; and

(e-e) determining mobile transmitter type as a function of the detected chirp slope.

2. (Original) The method of Claim 1 further comprising the step of asynchronously transmitting chirp signals in a geographic area.

3. (Original) The method of Claim 1 wherein transmitter type is determined as a function of the magnitude of the detected chirp slope.

4. (Original) The method of Claim 1 wherein transmitter type is determined as a function of the polarity of the detected chirp slope.

5. (Original) The method of Claim 1 wherein transmitter type is determined as a function.

6. (Original) In a chirp radio communication system, a method of discriminating between two types of transmitters transmitting chirp signals of opposing slope within the same chirp frequency range comprising the steps of:

- (a) receiving a chirp signal;
- (b) detecting the slope of the received chirp signal; and
- (c) determining transmitter type as a function of the detected chirp slope.

7. (Original) The method of Claim 6 further comprising the step of asynchronously transmitting chirp signals of opposing slopes.

8. (Presently Amended) In a multiple access chirp radio communication system for transmitting and receiving a first type of chirp signal of a first predetermined slope, the first predetermined slope continuously increasing in frequency band during a predetermined amount of time, wherein data is information is encoded by an offset of the starting frequency of the subsequent chirp duration of the chirp signal, the improvement comprising transmitting and receiving a second type of chirp signal having a different slope from the first predetermined slope over the predetermined frequency band in the same geographic coverage area, whereby the data capacity of the system is significantly increased without increasing the first predetermined frequency band.

9. (Original) The system of Claim 8 wherein the different slope is continuously decreasing in frequency over the predetermined frequency band during the predetermined amount of time.

10. (Original) The system of Claim 8 wherein the slope of the second chirp signal opposes the first predetermined slope.

11. (Original) The system of Claim 8 wherein the first chirp signal and the second chirp signal are being asynchronously transmitted.

12. (Presently Amended) A method of increasing the number of users that can be simultaneously accommodated in a multiple access chirp radio communication system comprising the steps of:

(a) transmitting and receiving a first chirp signal of a first predetermined slope over a predetermined frequency band; and,

(b) transmitting and receiving a second chirp signal over the predetermined frequency band in the same geographic area, the second chirp signal having a different slope for the first predetermined slope,

wherein, data is information is encoded by an offset of the starting frequency of subsequent chirp signals by the predetermined amount of time.

13. (Original) The method of Claim 12 wherein the first chirp signal and the second chirp signal are being transmitted asynchronously.

14. (Original) The method of Claim 12 wherein the slope of the second chirp signal opposes the first predetermined slope.

15. (Original) The method of Claim 12 wherein the slope of the second chirp signal having the same polarity and different magnitude from the first predetermined slope.

16. (Original) The method of Claim 12 wherein the slope of the second chirp signal having a different polarity and different magnitude from the first predetermined slope.

17. (Presently Amended) A multiple access chirp radio communication system operable in a geographic area comprising a first type of receivers and transmitters for receiving and transmitting chirp signals of a first slope and a second type of receivers and transmitters for receiving and transmitting chirp signals of a second slope, wherein data is information is encoded by an offset of the starting frequency of the subsequent chirp signal by duration of the chirp signal.

18. (Presently Amended) A multiple access chirp radio communication system operable in a geographic area comprising plural types of receivers and transmitters for receiving and transmitting chirp signals, each type of receiver and transmitter receiving and transmitting a chirp signal of a different slope, wherein data is information is encoded by an offset of the starting frequency of the subsequent chirp signal by duration of the chirp signal.

19. (New) A multiple access chirp radio communication system for communicating data encoded in a chirp signal comprising:

a plurality of base stations, said plurality of base stations comprising at least one base station of a first type and at least one base station of a second type;

each of said plurality of base stations comprising a transmitter and a receiver both of the same type as the respective base station;

a first type mobile station with a first type receiver and a first type transmitter capable of wireless communication with the at least one base station of the first type; and,

a second type mobile station with a second type receiver and a first type transmitter capable of wireless communication with the at least one base station of the second type;

wherein the first type base station and the first type mobile station are configured for wireless communication with a first type of chirp signal having a positive slope and the second type of base station and the second type mobile station are configured for wireless communication with a second type of chirp signal having a negative slope;

wherein the first type of chirp signal and the second type of chirp signals are in the same frequency band;

wherein the first type receiver comprises a first type of correlator for detecting the first type of chirp signal and the second type of receiver comprises a second type of correlator for detecting the second type of chirp signal;

wherein the data is encoded on the first or second types of chirps signals by starting subsequent chirps of the first or second types of chirp signals at frequencies different from the nominal frequency by a specific amount.

20. (New) In a multiple access chirp radio communication system, a method of discriminating between plural types of mobile transmitters transmitting chirp signals of different slopes over independent transmission paths within a same frequency band comprising the steps of:

- (a) receiving the a-chirp signal;
- (b) detecting the slope of the received chirp signal; and,
- (c) determining mobile transmitter type as a function of the detected chirp slope.